ABSTRACT

A mold cooling device comprises an air feeding and discharging circuit 22 which effects the driving by air of a pump section 1 for feeding a cooling liquid to a fluid flow passageway 65a formed in a mold 64 and the feeding of air to the fluid flow passageway 65a. Letting (Dx) be the outer diameter-corresponding dimension of the holed convex portion 53x of a cast article 64x, (D1) be the outer diameter of the pin section 65 of the mold 64, (t1) be the outer peripheral thickness of the pin section 65, and (T1) be $-5.103 + (0.621 \times Dx) - (1.068 \times D1) + (3.61 \times t1)$, the time (T) for feeding cooling liquid to the fluid flow passageway 65a after completion of the pouring of molten metal into the mold 64 is set so that the relation $T1 - 0.5$ seconds $\leqq T \leqq T1 + 0.5$ seconds is satisfied. Further, the central region of the bottom surface 67 in the bottom-closed cooling hole 66 formed in a mold 4 is formed with a flat surface portion 67a to which the front end opening in the inner pipe 62 is in opposed closely adjacent relationship, and the outer peripheral region of the flat surface portion 67a is formed with a curved surface portion 67b continuously extending from the flat surface portion 67a to the inner peripheral surface 66a of the bottom-closed cooling hole 66.